Seed tracing

RTB Seed System Toolbox Course:
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TOOL BOX FOR WORKING WITH ROOT, TUBER AND BANANA SEED SYSTEMS

CGIAR RESEARCH PROGRAM ON Roots, Tubers and Bananas

Purpose of seed tracing

Seed tracing can be used to map seed flows, information flows or how diseases might spread

The data set can form the basis of an Impact Network Analysis (INA): it forms a ‘minimum data set

Level and uses of seed tracing

Level. Regional, country wide or between countries

Users. seed intervention designers, implementers, evaluators, analysts, people conducting an impact network analysis (INA)

Output and audience of seed tracing

Output. a quantitative understanding of the links between key actors of the seed system

Audience. the users mentioned earlier, and policy makers, lobbyists, donors

Minimum sample size for seed tracing

- The tool identifies links between actors in a seed system. A link can be established between a minimum of 2 actors.
- The more links are identified, the more accurate the overview of the seed system.
- Seed tracing studies which give meaningful results and are still feasible in terms of data collection involve 50 to 500 respondents.
- Small sample sizes can display a seed system at a small level (e.g., village or district) while large sample sizes are useful at the national level or even across borders

Resources for using seed tracing

Number of people depends on the sample size and size of the study area. For small studies 1-2 people

Equipment: (digital) survey tool, transport, R or Excel software

Expertise:

- Enumerators collecting the data must speak the local language and understand key agronomic terms such as variety types.
- The researchers who analyze the data should know how to process network data.
- If the seed tracing study forms the bases of an impact network analysis, data should be entered in R.

Timing for seed tracing

- In theory a seed tracing study can be done at any time.
- Avoid conducting the survey in the middle of sourcing time
- The farmers should be able to remember where they sourced the seed
- Seed tracing studies are useful at the start of a project to give an overview of the seed system.
- They can also be conducted after an intervention e.g., to see how a new variety has diffused

Duration, seed tracing

- Depends on the sample size, number of questions, sampling strategy and number of enumerators.
- Snowball sampling and random sampling may identify distant farmers, requiring more travelling.
- A relatively simple survey can be conducted over the phone.

Steps for using seed tracing

Step 1. Make a proper study design to decide on e.g., the sample size, sampling strategy and which type of planting material will be traced

Step 2. Pre-test your tool!

Step 3. Data collection via surveys

Steps (continued)

Step 4. Data processing, preferably using R software

Step 5. Visualization of the network using analysis software and interpretation of the data

Methods that can be combined with seed tracing

Household survey: A household survey can be used to group actors and obtain information from them. For example, demographic information.

Willingness to studies: Can be included to understand how the network is likely to change based on farmers willingness to pay, adopt, test or change etc.

Agronomic data. Such as which actors experience pest and diseases, or use certain management practices etc.

Gender

When individual farmers are sampled, the gender of the respondents (or other socio-economic characteristics) can be differentiated in the results to answer gender-related questions such as: Do men and women have equal access to improved varieties?

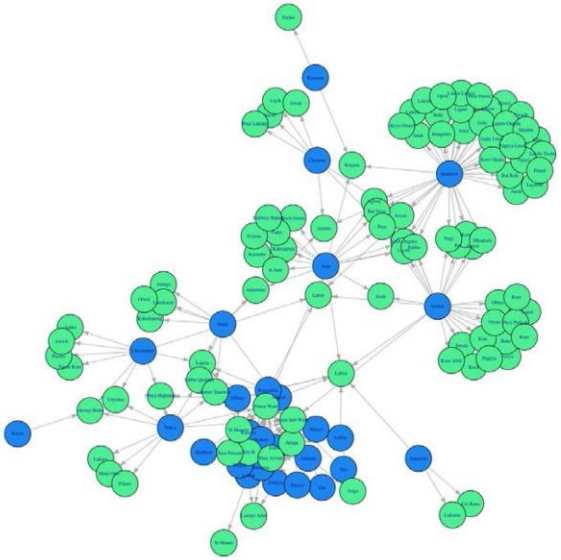
Gender responsiveness level 1: gender is a significant factor in this tool, but it is not the main reason for using it

Limitations of seed tracing

Snowball sampling is a suitable method to select participants. In practice, it can be challenging to apply. Actors identified via snowballing might be far away, their contact details might be missing, or for other reasons might not be shared. This can further result in a bias in sampling for example when it is easy to follow up on actors close by, but difficult for those far away.

Main advantages of seed tracing

Seed tracing can provide a visualization of seed systems. This makes it easier to identify where in the seed system interventions can be made for a high impact. Furthermore, does it form the bases of an Impact Network Analysis.



Andersen et al., 2017: Analyzing Key Nodes and Epidemic Risk in Seed Networks: Sweetpotato in Northern Uganda

Thank you

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User guide

- Kilwinger, F.B.M. and Buddenhagen, C.E. 2021. User guide to seed tracing. Lima (Peru). CGIAR Research Program on Roots, Tubers and Bananas (RTB). RTB User Guide. No. 2021-1. Available online at: www.rtb.cgiar.org
- https://cgspace.cgiar.org/handle/10568/111325

Description sheet

- Kilwinger, F.B.M. and Buddenhagen, C.E. 2021. Description sheet to seed tracing. Lima (Peru). CGIAR Research Program on Roots, Tubers and Bananas (RTB). Available online at: www.rtb.cgiar.org
- https://cgspace.cgiar.org/bitstream/handle/10568/111356/ds5874.pdf?sequence=1&isAllowed=y